



Hyper Historian Azure Collector



APPLICATION NOTE

August 2014

Description: Guide to configuring Hyper Historian to work in a cloud environment.

General Requirement: Knowledge of Hyper Historian and configuration of remote collectors (see application note: "Hyper Historian – Remote Collectors").

Introduction

Starting in version 10.85, Hyper Historian has been improved to allow better communication between a Hyper Historian Logger in the cloud (such as on a Microsoft Azure cloud server) and Collectors that are local to a site. Previously, the Collector machines could only act as servers, waiting for a Logger machine to contact them and ask for data, but new in 10.85 they can be configured to actively connect to a Logger machine in the cloud.

Another new feature in 10.85 that can be very helpful in cloud environments is the ability to compress configuration data and logged data packages. This can be used to minimize bandwidth between the collector machines and the logger.

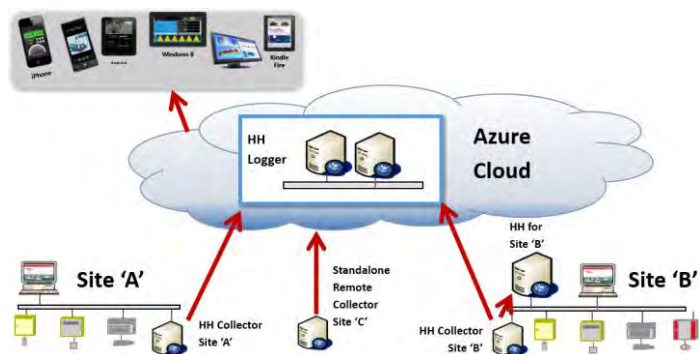


Figure 1 - Cloud Architecture

NOTE: This "reverse communication" setup and the compression settings can be beneficial in other environments where the desired behavior is to push data from collector to logger, rather than pull it from logger to collector. These features are not limited to cloud environments. They can be used together or separately in any environment that uses remote collectors.

Reverse Communication Configuration

Collector Machine Configuration

On the machines where the Collectors are located, open **Workbench** and go to **Tools → Platform Services → Advanced** tab. Check the box for "Enable Reporting to Server(s) in Azure or DMZ", then add your logger server URL in the table below. Click **OK** when done. You will need to restart the ICONICS

FrameWorX service or reboot the machine after making this change.

Figure 2 - Reporting to Servers in Azure or DMZ

All other configuration will be done on the logger machine, since the remote collectors will get the rest of their configuration settings from the logger.

Logger Machine Configuration

On the logger machine running on your cloud server, open **Workbench**, go to your **Hyper Historian** provider, and edit your standalone collector under **Node Setup and Redundancy**. Set the Protocol to **Use Local FrameWorX Server as Mediator**. Make sure the name of your primary collector node and optionally your secondary collector node are filled in as per standard Remote Collector recommendations.

Figure 3 - Collector Configuration

It is also recommended to check **Use configuration cache** at the bottom of the collector configuration page, so that if communication is lost between the collector and logger the collector will be able to continue without losing its configuration.

All other configuration will be the same as a standard Hyper Historian configuration with remote collectors.

NOTE: Make sure, that the Azure Portal has specified **Endpoint** for **HTTP for port 80**.



Compression Configuration

To configure compression settings, there are two dropdown boxes on the collector configuration page for **Compress Data** and **Compress Configuration**. Compress Data controls compression for the packets of logged data, and Compress Configuration controls compression for configuration data, should the configuration change.

Compression

Compress Data: Fast

Compress Configuration: Optimal

Figure 4 - Compression Settings

There are three settings for each of these dropdowns: None, Fast, and Optimal.

- **None** – No compression will be done. This option uses the most bandwidth, but the least CPU.
- **Fast** – Fast compression. This option uses medium bandwidth and medium CPU.
- **Optimal** – Data or configuration will be compressed as much as possible. This option uses the least bandwidth and the most CPU. All systems will be different, but on average it is estimated that Optimal will use 10% less bandwidth than Fast, but five times more CPU cycles.

In general, logged data benefits more from compression than configurations. A configuration could be compressed up to 20%, whereas logged data packets could be compressed as much as 60%.

You will want to choose the options to best suit your system, keeping in mind how often your configuration changes (most likely not very often), how much data you are collecting, and how important bandwidth or CPU usage is to your system.

NOTE: Remember that compression is CPU-intensive. If you are having CPU-related performance issues on your collector machines you may want to reduce the compression level for your data.

Replaying Data

On the machine where you'd like to display the data, open Workbench to the **FrameWorX Server** provider, select **BackEnd Servers** → **Platform Services** and add your Azure or cloud server. Once the server has been added, browse for your Hyper Historian pens under **FrameWorX Network** and the server name you specified.

FrameWorX Server Platform Services

This is the configuration of redundant platform services. Specify the machine name of your Back-End servers on the network.

Server Name	Primary Machine Name	Secondary Machine Name
CloudServer	http://AzureServerName:80/twxserver	

Figure 5 - Client Settings